

**GAS-FILLED CARRIER AIRCRAFTS AND
METHODS OF DISPERSING UNMANNED
AIRCRAFT SYSTEMS IN DELIVERING
PRODUCTS**

**CROSS-REFERENCE TO RELATED
APPLICATION**

[0001] This application claims the benefit of U.S. Provisional Application No. 62/294,748, filed Feb. 12, 2016, which is incorporated herein by reference in its entirety.

TECHNICAL FIELD

[0002] This invention relates generally to a gas-filled carrier aircraft.

BACKGROUND

[0003] In a modern retail environment, there is a need to improve the customer service and/or convenience for the customer. One aspect of customer service is the availability of products. The availability of products is dependent in part on the distribution of products. There are numerous ways to distribute and deliver products. Getting the product to a delivery location, however, can cause undesirable delays, can add cost and reduce revenue.

BRIEF DESCRIPTION OF THE DRAWINGS

[0004] Disclosed herein are embodiments of systems, apparatuses and methods pertaining to gas-filled carrier aircrafts to transport unmanned aircraft systems. This description includes drawings, wherein:

[0005] FIG. 1 illustrates a simplified side view of an exemplary gas-filled aerial transport and launch system, in accordance with some embodiments.

[0006] FIG. 2 illustrates a simplified overhead view of an exemplary carrier compartment, in accordance with some embodiments.

[0007] FIG. 3 illustrates a simplified overhead view of an exemplary carrier compartment, in accordance with some embodiments.

[0008] FIG. 4 illustrates a simplified flow diagram of an exemplary process of aeri ally transporting and launching unmanned aircraft systems, in accordance with some embodiments.

[0009] FIG. 5 illustrates an exemplary system for use in implementing methods, processes, techniques, devices, apparatuses, systems, servers, sources and the like in distributing products in accordance with some embodiments.

[0010] Elements in the figures are illustrated for simplicity and clarity and have not necessarily been drawn to scale. For example, the dimensions and/or relative positioning of some of the elements in the figures may be exaggerated relative to other elements to help to improve understanding of various embodiments of the present invention. Also, common but well-understood elements that are useful or necessary in a commercially feasible embodiment are often not depicted in order to facilitate a less obstructed view of these various embodiments of the present invention. Certain actions and/or steps may be described or depicted in a particular order of occurrence while those skilled in the art will understand that such specificity with respect to sequence is not actually required. The terms and expressions used herein have the ordinary technical meaning as is accorded to such terms and expressions by persons skilled in the technical field as set

forth above except where different specific meanings have otherwise been set forth herein.

DETAILED DESCRIPTION

[0011] The following description is not to be taken in a limiting sense, but is made merely for the purpose of describing the general principles of exemplary embodiments. Reference throughout this specification to “one embodiment,” “an embodiment,” “some embodiments,” “an implementation,” “some implementations,” or similar language means that a particular feature, structure, or characteristic described in connection with the embodiment is included in at least one embodiment of the present invention. Thus, appearances of the phrases “in one embodiment,” “in an embodiment,” “in some embodiments,” “in some implementations,” and similar language throughout this specification may, but do not necessarily, all refer to the same embodiment.

[0012] Generally speaking, pursuant to various embodiments, systems, apparatuses, methods and processes are provided illustrating a gas-filled aerial transport and launch system. The system includes a transport aircraft that comprises one or more gas chamber and a carrier compartment that is secured with the one or more gas chambers. One or more propulsion systems are cooperated with the gas chamber and/or the carrier compartment. When activated, the propulsion systems cause the transport aircraft to move through the air. The system further includes a navigation control system that controls the direction of travel of the transport aircraft. The carrier compartment includes an unmanned aircraft system (UAS) storage area configured to receive multiple UASs staged to be launched in delivering products. One or more UAS launching bays are included in the carrier compartment that enables the UASs to be launched while the transport aircraft is in flight and while UASs are carrying a product or package to be delivered to an intended corresponding delivery location that is within a UAS flight threshold from a location of the transport aircraft at the time the UAS is launched.

[0013] FIG. 1 illustrates a simplified side view of an exemplary gas-filled aerial transport and launch system 100, in accordance with some embodiments. FIG. 2 illustrates a simplified overhead view of an exemplary carrier compartment 108, in accordance with some embodiments. Referring to FIGS. 1-2, in some embodiments, the transport and launch system 100 include a transport aircraft 102 that includes and/or is in wireless (and sometimes wired) communication with a scheduling control system 104. The scheduling control system communicates at least delivery schedules corresponding to the launching of UASs from the transport aircraft 102. In some implementations, the scheduling control system may be remote from the transport aircraft (e.g., at a ground station, distributed over multiple ground locations, etc.), while in other implementations, some or all of the scheduling control system may be maintained on the transport aircraft.

[0014] The transport aircraft includes a gas chamber 106 and a carrier compartment 108 that is secured with the gas chamber. In some instances, the gas chamber includes multiple sub-chambers that are separate and maintained to provide added security and safety. The gas chamber and/or sub-chambers, when filled with a heated gas, helium, other relevant gas, or a combination of two or more of such gases, induces a lifting force on the carrier compartment 108.